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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,451	03/17/2004	Lawrence R. Mills	C4-1207	3999

10850 7590 06/06/2012

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ART UNIT	PAPER NUMBER
2482	

MAIL DATE	DELIVERY MODE
06/06/2012	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/802,451
Filing Date: March 17, 2004
Appellant(s): MILLS, LAWRENCE R.

Alan M. Weisberg (Reg. No. 43,982)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1/30/2012 appealing from the Office action mailed 8/17/2011.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-5, 9, 11, 12, 14-21 and 23-26 are pending in this Application. Claims 1-5, 9, 11, 12, 14-21 and 23-26 have been finally rejected, and it is from the final rejection of Claims 1- 5, 9, 11, 12, 14-21 and 23-26 that this Appeal is taken. Claims 6-8, 10, 13 and 22 have been cancelled.

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is

taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

US 2004/0257436 A1	Koyanagi et al.	12-2004
US 5,359,363 A	Kuban et al.	9-1994
US 2007/0182819 A1	Monroe	8-2007
US 5,563,650 A	Poelstra	10-1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 11-12, 14, 16-18, 20-21, 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (US 20040257436 A1) in view of Kuban et al. (US 5359363 A).

Re **claim 1**, Koyanagi discloses a system for creating signals indicative of a graphical user interface from wide-angle image data corresponding to a monitored area, said system comprising: a

buffer configured to receive wide-angle image data corresponding to the monitored area (Koyanagi: Fig. 3, storing portion 30); and a processor (Koyanagi: Fig. 3, computer 1 and controlling portion 31) operably coupled to said buffer and configured to: generate, from the buffered wide angle image data, panoramic view data of a panoramic view of the monitored area (Koyanagi: Fig. 3 and paragraph [0046], computer 1 comprises a controlling portion 31, a video capture portion 29, and a storing portion 30; Figs. 1 and 2 and paragraph [0051], computer 1 processes graphics in the operation area 6A (corresponding to the claimed virtual view) and the panorama operation area 6B (corresponding to the claimed panoramic view) displayed on the monitor, and, therefore, the controlling portion 31 of computer 1 must control the processing algorithms for generating the graphics in the operation area 6A and the panorama operation area 6B); generate virtual view data representing a virtual view of a portion of the panoramic view (Koyanagi: Fig. 3 and paragraph [0046], computer 1 comprises a controlling portion 31, a video capture portion 29, and a storing portion 30; Figs. 1 and 2 and paragraph [0051], computer 1 processes graphics in the operation area 6A (corresponding to the claimed virtual view) and the panorama operation area 6B (corresponding to the claimed panoramic view) displayed on the monitor, and, therefore, the controlling portion 31 of computer 1 must control the processing algorithms for generating the graphics in the operation area 6A and the panorama operation area 6B; paragraph [0012], the user selects a desired point for the operation area and the system generates a photograph at the designated position selected; Fig. 3, pointing device 14 is connected to computer 1, indicating that computer 1 processes the positional information from the user input); and encode the panoramic view data and the virtual view data for display (Koyanagi: paragraph [0043], captured images are displayed; paragraph [0051], pictures may be captured in a particular format).

Koyanagi does not explicitly state that the virtual view data is generated from the buffered wide-angle image data. However, Kuban discloses an omniview motionless camera surveillance system, wherein the omnidirectional viewing system produces the equivalent of pan, tilt, zoom, and rotation within a selected field-of-view with no moving parts by direct mapping of the image region-of-interest into a corrected image using an orthogonal set of transformation algorithms (Kuban: column 2, line 51 -column 3, line 11). Since both Koyanagi and Kuban relate to generating a region-of-interest image from wide

angle image data, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the motionless region-of-interest generation of Kuban with the system of Koyanagi in order to conserve power by reducing the need to move a pan-tilter device.

Re **claim 2**, Koyanagi discloses a user input module configured to provide user command data to said processor (Koyanagi: Fig. 3, pointing device 14; paragraph [0045]); and said processor being further configured to determine the virtual view data based on the user command data (Koyanagi: paragraph [0044]).

Re **claim 3**, Koyanagi discloses that the processor is further configured to determine reference data corresponding to an area in the panoramic view represented by the virtual view (Koyanagi: Fig. 1; paragraph [0043], "a frame 6C that represents the current position and the angle of view of the pan tilter and a pan tilter limiter 6D are superimposed to the panorama picture").

Re **claim 4**, Koyanagi discloses a first video camera system having a first video camera operably coupled to said buffer and said processor (Koyanagi: Fig. 3, lens block 15 and CCD 19 generate image data), said first video camera system operable to generate wide-angle image data (Koyanagi: Figs. 4A-4F and paragraphs [0021] and [0053]-[0054], image data is compiled into a panoramic view).

Re **claim 11**, Koyanagi discloses that the system transforms wide-angle image data received by the buffer into virtual view data corresponding to the virtual view and into panoramic view data corresponding to the panoramic view in real time (Koyanagi: Fig. 15; paragraph [0131], the flow of the control algorithm advances to relevant steps in accordance with a user input, indicating real-time processing).

Re **claim 12**, Koyanagi discloses a display device operably coupled to said processor to display the panoramic view and the at least one virtual view (Koyanagi: Fig. 3, monitor 2).

Re **claim 14**, Koyanagi discloses at least one reference window overlaid on at least one portion of the panoramic view, each overlaid portion defining the portion of the panoramic view to which the virtual view corresponds (Koyanagi: Figs. 1 and 2), and the at least one reference window having a size and a position determined according to the user command data (Koyanagi: paragraph [0043], user

controls position of operation area/virtual view; Fig. 16B; Figs. 10A and 10B; paragraph [0094], zoom operation changes the size of the reference window within the panoramic view).

Claim 16 recites the corresponding method for implementation within the system of claim 1, and, therefore, has been analyzed and rejected with respect to claim 1 above.

Re **claim 17**, Koyanagi discloses determining pan, tilt and zoom values (Koyanagi: Fig. 16A, step S13); and determining a portion of the buffered wide-angle data to transform into virtual view data for the virtual view based on the pan, tilt and zoom values (Koyanagi: paragraphs [0050]-[0051]).

Re **claim 18**, Koyanagi discloses determining reference data based on the pan, tilt and zoom values (Koyanagi: paragraph [0043]).

Re **claim 20**, Koyanagi discloses encoding reference data, virtual view data and panoramic view data for output (Koyanagi: paragraph [0051]).

Re **claim 21**, Koyanagi discloses a system for creating signals indicative of a graphical user interface from wide-angle image data corresponding to a monitored area, said system comprising: means for buffering wide-angle image data corresponding to the monitored area (Koyanagi: Fig. 3, storing portion 30); means for processing and generating, from said buffered wide-angle image data received from said storing means, panoramic view data of a panoramic view of the monitored area (Koyanagi: Fig. 3 and paragraph [0046], computer 1 comprises a controlling portion 31, a video capture portion 29, and a storing portion 30; Figs. 1 and 2 and paragraph [0051], computer 1 processes graphics in the operation area 6A (corresponding to the claimed virtual view) and the panorama operation area 6B (corresponding to the claimed panoramic view) displayed on the monitor, and, therefore, the controlling portion 31 of computer 1 must control the processing algorithms for generating the graphics in the operation area 6A and the panorama operation area 6B; paragraphs [0053]-[0054], images merged to form panoramic pictures); and means for processing and generating virtual view data representing a virtual view of a portion of the panoramic view (paragraph [0012], the user selects a desired point for the operation area and the system generates a photograph at the designated position selected; Fig. 3, pointing device 14 is connected to computer 1, indicating that computer 1 processes the positional information from the user input).

Koyanagi does not explicitly state that the virtual view data is generated from the buffered wide-angle image data. However, Kuban discloses an omniview motionless camera surveillance system, wherein the omnidirectional viewing system produces the equivalent of pan, tilt, zoom, and rotation within a selected field-of-view with no moving parts by direct mapping of the image region-of-interest into a corrected image using an orthogonal set of transformation algorithms (Kuban: column 2, line 51 -column 3, line 11). Since both Koyanagi and Kuban relate to generating a region-of-interest image from wide angle image data, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the motionless region-of-interest generation of Kuban with the system of Koyanagi in order to conserve power by reducing the need to move a pan-tilter device.

Re **claim 23**, Koyanagi discloses that the size and the position of each reference window determines pan, tilt and zoom values for the corresponding virtual view (Koyanagi: paragraph [0043], user controls position of operation area/virtual view; Fig. 16B; Figs. 10A and 10B; paragraph [0094], zoom operation changes the size of the reference window within the panoramic view).

Re **claim 26**, Koyanagi discloses determining a position and a size of at least one reference window positioned over the portion of at least one of the at least one panoramic view corresponding to the virtual view, the position and size defined according to user command data (Koyanagi: paragraph [0043], user controls position of operation area/virtual view; Fig. 16B; Figs. 10A and 10B; paragraph [0094], zoom operation changes the size of the reference window within the panoramic view); and wherein the pan, tilt and zoom values are based upon the position and the size of the at least one reference window (Koyanagi: paragraph [0044], user input controls pan tilter).

Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (US 20040257436 A1) in view of Kuban et al. (US 5359363 A) in view of Monroe (US 20070182819 A1).

Re **claim 9**, Koyanagi and Kuban disclose a majority of the features of claim 9, as discussed above in claim 4, and additionally a camera system operably coupled to the processor (Koyanagi: Fig. 3, camera portion 11), said camera system having a camera and being configured to aim the camera at a

portion of the monitored area according to pan, tilt and zoom command data (Koyanagi: paragraphs [0048]-[0049]), and configured to capture video image data (Koyanagi: Fig. 3, camera portion 11 outputs a video signal); and wherein the processor is further configured to communicate pan, tilt and zoom command data to cause the camera system to aim the camera at a portion of the monitored area (Koyanagi: paragraphs [0048]- [0049]), but Koyanagi does not specifically disclose that the camera system includes a second video camera; and wherein captured video image data from the second video camera is included in the virtual view.

However, Monroe discloses a digital security multimedia sensor system, wherein panoramic views of monitored areas are created by merging images captured by a multitude of cameras (Monroe: Fig. 2, elements 10a-10h) and cameras within the array may be selectively scrutinized in order to track objects (Monroe: Fig. 16; paragraph [0106]). Since Koyanagi, Kuban, and Monroe all relate to panoramic image processing, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the multiple cameras of Monroe with the photographing system of Koyanagi and Kuban in order to permit transmission of the least amount of data to accomplish the desired image transmission (Monroe: paragraph [0024]). The combined system of Koyanagi, Kuban, and Monroe has all of the features of claim 9.

Re **claim 19**, the combined system of Koyanagi and Kuban discloses a majority of the features of claim 19, as discussed in claims 16-18 above. Koyanagi additionally discloses that the buffered wide-angle data is received from a first video camera system communicating pan, tilt and zoom commands to a camera system (Koyanagi: paragraph [0049]); and receiving virtual view data for the at least one virtual view (Koyanagi: paragraph [0012]) from the camera system (Koyanagi: paragraph [0012]), but Koyanagi does not specifically disclose a second virtual view and receiving virtual view data for the second virtual view, wherein captured video image data from the second video camera is included in the at least one virtual view.

However, Monroe discloses a digital security multimedia sensor system, wherein panoramic views of monitored areas are created by merging images captured by a multitude of cameras (Monroe: Fig. 2, elements 10a-10h) and cameras within the array may be selectively scrutinized in order to track

objects (Monroe: Fig. 16; paragraph [0106]). Since Koyanagi, Kuban, and Monroe all relate to panoramic image processing, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the multiple cameras of Monroe with the photographing system of Koyanagi in order to permit transmission of the least amount of data to accomplish the desired image transmission (Monroe: paragraph [0024]). The combined system of Koyanagi, Kuban, and Monroe has all of the features of claim 19.

Claims 5, 15, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyanagi et al. (US 20040257436 A1) in view of Kuban et al. (US 5359363 A) in view of Poelstra (US 5563650 A).

Re **claim 5**, the combined system of Koyanagi and Kuban discloses a majority of the features of claim 5, as discussed above in claim 4, but neither Koyanagi nor Kuban specifically discloses that the first video camera system includes a fisheye lens. However, Poelstra discloses a device for producing and consulting panoramic images, wherein images are produced using a fish eye lens and the images are transformed into panoramic images (Poelstra: column 1, lines 42-48). Since Koyanagi, Kuban, and Poelstra all relate to producing panoramic images for review by a user, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the fish eye lens of Poelstra with the photographing system of Koyanagi in order to produce a system capable of creating multiple panoramic views very quickly for consultation by the user (Poelstra: column 1, lines 38-41). The combined system of Koyanagi and Poelstra has all of the features of claim 5.

Re **claim 15**, the combined system of Koyanagi and Kuban disclose a majority of the features of claim 15, as discussed in claim 14 above. Additionally, Koyanagi discloses that the panoramic view includes a first panoramic view, the first panoramic view corresponding to a first portion of the monitored area (Koyanagi: Figs. 4A-4E, a panoramic image representing a portion of the monitoring area is extracted); the virtual view includes a first virtual view, the first virtual view corresponding to a first portion of the first panoramic view (Koyanagi: Figs. 1 and 2, the operation area represents a selected portion of the panorama operation area), but neither Koyanagi nor Kuban specifically discloses that the at least one

panoramic view includes a second panoramic view, the second panoramic view corresponding to the remaining portion of the monitored area, and a second virtual view, the second virtual view corresponding to a second portion of the second panoramic view; and a combination of the first panoramic view and the second panoramic view provide a 360°view of the monitored area relative to a vertical axis.

However, Poelstra discloses a device for producing and consulting panoramic images, wherein images are produced using a fish eye lens and the images are transformed into panoramic images (Poelstra: column 1, lines 42-48), and more than one panoramic image may be extracted from the initial fish eye image (Poelstra: Figs. 5 and 6; column 3, lines 42-46). Poelstra further discloses registering of complete surroundings in a single image with the help of a fish eye optic (Poelstra: column 1, lines 50-51), wherein successive radial panoramic images are generated from the original fish eye image (Poelstra: column 1, line 65, through column 2, line 7). By disclosing that the fish eye image registers the complete surroundings, Poelstra indicates that the fish eye image encompasses 360°, and, thus, one of ordinary skill in the art at the time of the invention would have found it obvious that the radial images generated from the original fish eye image would also encompass the complete surroundings. Poelstra also discloses that the fish eye image is converted to panoramic images with reference to the center of the fish eye image (Poelstra: column 2, lines 1-2), wherein the center of the fish eye image corresponds to a reference axis, and an angle gamma indicates the maximum viewing angle with respect to an axis that is perpendicular to the axis corresponding to the center of the fish eye image (Poelstra: Fig. 7; column 3, lines 56-61). Since Koyanagi, Kuban, and Poelstra all relate to producing images for consultation by a user, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the multiple panoramic image display of Poelstra with the panoramic/virtual view display of Koyanagi and Kuban in order to produce a system capable of producing and consulting a large number of panoramic views quickly (Poelstra: column 1, lines 38-41). The combined system of Koyanagi, Kuban, and Poelstra has all of the features of claim 15.

Re **claim 24**, the combined system of Koyanagi, Kuban, and Poelstra discloses a majority of the features of claim 24, as discussed above in claim 15. Additionally, Koyanagi discloses that the at least one reference window is user-selectable for controlling the size and the position of the reference window

to determine pan, tilt and zoom values for the corresponding virtual view (Koyanagi: paragraph [0043], user controls position of operation area/virtual view; Fig. 16B; Figs. 10A and 10B; paragraph [0094], zoom operation changes the size of the reference window within the panoramic view).

Re **claim 25**, the combined system of Koyanagi and Kuban discloses a majority of the features of claim 25, as discussed above in claim 16. Neither Koyanagi nor Kuban specifically discloses two panoramic views. However, Poelstra discloses a device for producing and consulting panoramic images, wherein the at least one panoramic view includes: a first panoramic view corresponding to a first portion of the monitored area (Poelstra: Fig. 6, transformed image 22; column 3, lines 3-4 and 42-46); a second panoramic view corresponding to a remaining portion of the monitored area (Poelstra: Fig. 6, transformed image 23; column 3, lines 3-4 and 42-46); and the first panoramic view and the second panoramic view combine to provide a 360° view of the monitored area relative to a vertical axis (Poelstra: column 1, lines 50-51, registering of complete surroundings in a single image with the help of a fish eye optic; column 1, line 65, through column 2, line 7, successive radial panoramic images are generated from the original fish eye image); and wherein said method further comprises encoding the first panoramic view, the second panoramic view, and virtual view of a portion of at least one of the first panoramic view and the second panoramic view for simultaneous display (Poelstra: Fig. 6; column 3, lines 3-4, two panoramic images are displayed simultaneously). Since Koyanagi, Kuban, and Poelstra all relate to producing images for consultation by a user, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the multiple panoramic image display of Poelstra with the panoramic/virtual view display of Koyanagi and Kuban in order to produce a system capable of producing and consulting a large number of panoramic views quickly (Poelstra: column 1, lines 38-41). The combined system of Koyanagi, Kuban, and Poelstra has all of the features of claim 25.

(10) Response to Argument

1. The Rejection of Claims 1-4, 11-12, 14, 16-18, 20, 21, 23 and 26 under 35 U.S.C. §103(a)

A. The proposed modification of Koyanagi with Kuban changes the principle operation of Koyanagi such that there is no motivation to combine the references

The Appellant contends that modifying Koyanagi with Kuban would change the "principle of operation of the prior art being modified" such that there is and can be no motivation to combine (M.P.E.P. § 2143.01)(citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)), wherein "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious" (M.P.E.P. § 2143.01)(citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)). More specifically, the Appellant states that modifying Koyanagi's generation of a panoramic image using a motion based pan tilter camera system with Kuban's motionless camera system would change the principle operation of Koyanagi by replacing Koyanagi's essential virtual sphere mapping and pan tilter camera. However, the Examiner respectfully disagrees.

Koyanagi discloses that to generate a panoramic picture, the pan tilter camera disposed at the center of a virtual spherical surface photographs adjacent pictures, which are combined in a way such that distortions from overlapping edges are normalized to eliminate distortion (Koyanagi: Fig. 4A-4F and paragraphs [0053]-[0054]). Kuban discloses a system which examines a hemispherical distorted image (analogous to the non-normalized combined image of Koyanagi) to create smaller, localized window of interest out of the overall panoramic image (Kuban: column 5, lines 6-32). Koyanagi explicitly states that a panoramic picture may be generated by a method other than the one disclosed (Koyanagi: paragraph [0052]), wherein one of ordinary skill in the art would appreciate that the use fisheye lenses is another well-known way of creating a panoramic image. Kuban states that the "components function as a system to select a portion of the input image (fisheye or other wide angle) and the mathematically transform the image to provide the proper prospective for output" (Kuban: column 4, lines 61-65, emphasis added), wherein the stitched-together panoramic image of Koyanagi qualifies as an "other", non-fisheye wide angle image. Therefore, both references cited allow for alternate methods of creating panoramic pictures. If the example is considered wherein the wide-angle image is a fisheye image replacing the stitched-together composite of Koyanagi, the mathematical transformation involved in unwarping a fisheye image is not altogether principally different from the mathematical procedure to unwarp a stitched-together

composite such as the one disclosed by Koyanagi. Accordingly, both methods aim to undistort the image data that is mapped to a virtual spherical surface (Koyanagi: paragraph [0054])(Kuban: column 5, lines 10-29). Therefore, from the teachings of the references themselves and the knowledge of one of ordinary skill in the art, it is appreciated that each reference is capable of using either image input method, and therefore are not rendered inoperable by the use of either composite panoramic pictures or fisheye panoramic pictures.

The Appellants additionally assert that neither reference cited discloses power conservation as a benefit, and therefore one of ordinary skill in the art could not rely on power conservation for motivation. However, the Examiner respectfully disagrees. The references do not need to explicitly disclose a benefit for one of ordinary skill in the art to recognize such merit. Power is needed to operate a moving part in a device or system, such that eliminating the motion of said part would eliminate the need to use said power, thus conserving energy. Additionally, Kuban provides other more explicit motivation for using a fisheye lens rather than a motorized drive. Kuban states that in order to provide a maximum amount of viewing coverage or subtended angle, mechanical pan/tilt mechanisms usually use motorized drives and gear mechanisms to manipulate the vertical and horizontal orientation, wherein collisions with the working environment caused by these mechanical pan/tilt orientation mechanisms can damage both the camera and the work space and impede the remote handling operation (Kuban: column1, lines 43-52). Accordingly, it is an object of the present invention to provide an apparatus that can provide an image of any portion of the viewing space within a selected field-of-view without moving the apparatus, and then electronically correct for visual distortions of the view (Kuban: column 2, lines 7-11).

B. The Examiner fails to cite a reference or combination of references disclosing each and every element of Claims 1, 16 and 21

i. The Office Action misinterprets Koyanagi and Applicants' claimed features

Regarding claims 1, 16, and 21, the Appellant asserts that the Office Action misinterprets Koyanagi's generated panoramic picture by stating that Konayagi's panoramic picture discloses both

Applicant's claimed wide angle image data and Applicant's claimed panoramic view data that is generated based on wide angle data, thus failing to teach or suggest the claimed limitation of generating, "from the buffered wide angle image data, panoramic view data of a panoramic view of the monitored area". However, the Examiner respectfully disagrees.

As previously cited in the office action, Koyanagi discloses in Fig. 3 a monitor 2, which displays an operation area 6A and a panoramic operation area 6B. Figs. 1 and 2 of Koyanagi further illustrate the inclusion of a panoramic generation button 6E, which is operated by the user (Koyanagi: paragraph [0052]). Further scrutiny of the process used to generate the panoramic image is illustrated by Figs. 4A-4F. In Figs. 4A-4F of Koyanagi, adjacent pictures on a virtual spherical surface are combined into one panoramic picture (Koyanagi: paragraph [0053]). Paragraph [0053] of Koyanagi further states that when two adjacent pictures are simply combined, they overlap and distort at the overlapped portion. To prevent two adjacent pictures from overlapping and distorting, they are mapped to the virtual spherical surface, and mapped pictures are combined in such a manner that an overlapped portion and an unnecessary portion are removed (Koyanagi: paragraph [0054]). Therefore, a procedure takes place where the original component images are transformed into a seamless, undistorted panoramic image. Accordingly, the original component images may be considered wide angle image data, as claimed, while the resultant panoramic image may be considered panoramic view data. Further support for interpreting the original component images as wide angle image data is found in paragraph [0042] of Koyanagi, wherein it is stated that the zoom lens of the pan tilter camera may be placed on a wide angle side.

Koyanagi also discloses that the video capturing portion 29 of Koyanagi's Fig. 3 allows a picture to be captured in a particular format and stored in the storing portion 30 of the computer 1 (Koyanagi: paragraph [0051]). Use of the language "captured in a particular format" indicates that this operation is performed immediately upon light traveling through the lens block 16 and being focused onto the solid state CCD pick up device 19, as shown in Fig. 3 of Koyanagi and described in paragraph [0047]. Furthermore, one of ordinary skill in the art would find it obvious that when performing such complex, computationally intensive operations as image compression and/or panoramic picture generation from

fused images, the data would have to be buffered. Otherwise, if the data were not buffered, such operations would be impossible to be performed in a computer environment.

ii. Koyanagi's and Kuban fail to disclose or suggest the above cited features of Claims 1, 16 and 21

Regarding claims 1, 16, and 21, the Appellant contends that neither Koyanagi nor Kuban specifically teaches or suggests generating, "from the buffered wide-angle image data[,] virtual view data representing a virtual view of a portion of the panoramic view". More specifically, the Appellant asserts that while Kuban describes that "only the portion of interest" and not the entire input image need be transformed (Kuban, col. 4, lines 67-68), Kuban's system does not generate both panoramic view data and virtual view data from buffered wide angle image data as recited in Claims 1, 16 and 21, thus failing to cure the deficiencies of Koyanagi. However, the Examiner respectfully disagrees.

As noted above, the step of generating a panoramic image from the buffered wide angle image data has been addressed with respect to the disclosure of Koyanagi. Koyanagi also discloses generating a virtual view of a portion of the panoramic view, but Koyanagi does not specifically disclose that the virtual view is generated directly from buffered wide angle image data. Accordingly, the Kuban reference was presented to cure this deficiency. Kuban discloses a system which examines a hemispherical distorted image (analogous to the non-normalized combined image of Koyanagi) to create smaller, localized window of interest out of the overall panoramic image (Kuban: column 5, lines 6-32). Furthermore, the localized window of interest has the capability to be controlled by a joystick in order to emulate traditional pan and tilt functions (Kuban: column 5, lines 33-39) and to modify the magnification of the localized window similar to a zoom function (Kuban: column 5, lines 45-49), wherein the transformations occur between the input memory buffer and the output memory buffer (Kuban: column 5, lines 6-10). Therefore, the functions are performed with only stored data, and do not utilize a separate pan/tilter to generate the localized window, thus taking the virtual view directly from buffered wide angle image data.

C. The Examiner fails to cite a reference or combination of references disclosing each and every element of Claims 2-4, 11, 12, 14, 17, 18, 20, 23 and 26

The Appellant contends that claims 2-4, 11, 12, 14, 17, 18, 20, 23 and 26 are patentable by virtue of their dependency from claims 1, 16, and 21 argued above. However, the Examiner respectfully disagrees. In view of the Examiner's rebuttal of the arguments presented above for claims 1, 16, and 21, this argument is moot.

2. The Rejection of Claims 9 and 19 under 35 U.S.C. §103(a)

A. The Examiner fails to cite a reference or combination of references disclosing each and every element of Applicants' claimed invention

Regarding claims 9 and 19, the Appellant contends that Monroe fails to cure the deficiencies of Koyanagi and Kuban presented above with respect to claims 1, 16, and 21. More specifically, it is argued that Monroe fails to teach or suggest generating, from the buffered wide angle image data, panoramic view data of a panoramic view of the monitored area and virtual view data representing a virtual view of a portion of the panoramic view. However, in view of the Examiner's rebuttal of the arguments presented above for claims 1, 16, and 21, this argument is moot.

3. The Rejection of Claims 5, 15, 24 and 25 under 35 U.S.C. §103(a)

A. The Examiner fails to cite a reference or combination of references disclosing each and every element of Applicants' claimed invention

Regarding claims 5, 15, 24, and 25, the Appellant contends that Poelstra fails to cure the deficiencies of Koyanagi and Kuban presented above with respect to claims 1, 16, and 21. More specifically, it is argued that Poelstra fails to teach or suggest generating, from the buffered wide angle image data, panoramic view data of a panoramic view of the monitored area and virtual view data representing a virtual view of a portion of the panoramic view. However, in view of the Examiner's rebuttal of the arguments presented above for claims 1, 16, and 21, this argument is moot.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Christopher Findley/

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Supervisory Patent Examiner, Art Unit 2488

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